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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,764	09/19/2001	Jun Li	10007965	9833

7590 01/13/2005	EXAMINER
HEWLETT-PACKARD COMPANY	RUTTEN, JAMES D

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Intellectual Property Administration
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ART UNIT	PAPER NUMBER
2122	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/955,764	LI ET AL.
	Examiner	Art Unit	
	J. Derek Rutten	2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 September 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-43* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>07 September 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All   b)☐ Some * c)☐ None of:

　　　　1.☐ Certified copies of the priority documents have been received.

　　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
　　　　　　application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

1.   Acknowledgement is made of Applicant's amendment dated 9/7/2004, responding to the

6/7/2004 Office action provided in the rejection of claims 1-43, wherein claims 1, 20, 29, 36, and

37 have been amended, no claims have been canceled, and no new claims have been added.

Claims 1-43 remain pending in the application and have been fully considered by the examiner.

2.   Applicant has primarily argued that the claims are not obvious over the prior art of

record, "JaViz: A client/server Java profiling tool" by Kazi et al. (hereinafter referred to as

"Kazi") in view of "Automatic Insertion of Performance Instrumentation for Distributed

Applications" by Blumson et al. (hereinafter referred to as "Blumson"), because neither

reference teaches the use of a "global causal identifier". This argument is not persuasive, as will

be addressed under the *Response to Arguments* section below.

3.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Response to Arguments

4.   Applicant argues in paragraph 2 of page 12 that Kazi and Blumson, "fail to teach or

suggest that a global causal identifier is included in the stub start log data and the stub end log

data as recited in claims 1, 29, and 36." However, as noted in the following rejection, Kazi

discloses the use of method and thread identifiers which provide global identification of a

method invocation. See page 4 paragraph 3:

> Invocations of the same method executed under different threads are distinguished from one another by
>
> their **unique thread identifiers**.

Also page 5 paragraph 3:

> In addition to the parent-child links to reflect the call graph, each record contains such information as the
>
> number of methods invoked by this method, the time when the method started, the time when it completed,
>
> the thread executing this method, the **method identifier** of the method call being represented, and the
>
> specific Jvm on which the method is executed.

Therefore, Kazi does in fact provide global causal identifiers in the log data.

5.   It is noted that applicant makes the argument in paragraph 2 on page 18 that Kazi "does

not require global causal identifiers because it is not necessary to combine multiple logs."

However, Kazi describes a "merge step" that takes multiple log files and combines them. See

last line of page 4 and the following 1st paragraph of page 5. Therefore, Kazi in fact discloses

the combination of multiple logs, which requires a global causal identifier in order to distinguish

method calls amongst the various virtual machines involved in a distributed program.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   Claims 1-7, 9-11, 13-19, 21-32, and 35-42 are rejected under 35 U.S.C. 103(a) as being

unpatentable over prior art of record Kazi in view of Blumson.

As per claim 1, Kazi discloses:

A monitoring method for a component-based software system operating over one

or more processing devices (Kazi page 1, Abstract: "The JaViz performance

analysis tool generates **execution traces** with sufficient

detail to determine program hot spots, **including remote**

method calls, in a **distributed Java application** program"; also

page 8 paragraph 3: "...executing on a physically distributed

processor."), *comprising the steps of:*

initiating an invocation of a second software component from within an execution

of a first software component (Kazi page 8 paragraph 3 under "Client/server trace

generation": "The Java remote method invocation (RMI) facility

allows **one Jvm to execute a method on another Jvm**, which

may be executing on a physically distributed processor.");

recording a stub start log data including a global causal identifier before said

invocation of said second software component (Kazi page 7 last paragraph under

"Detailed trace generation": "The trace generation module of **the Jvm is modified** to **record every invocation** of a method using time stamps that **show the start and end times** of the method with microsecond resolution"; also, page 4 paragraph 3: "Invocations of the same method executed under different threads are distinguished from one another by their **unique thread identifiers**."; also page 5 paragraph 3: "In addition to the parent-child links to reflect the call graph, each record contains such information as the number of methods invoked by this method, the time when the method started, the time when it completed, the thread executing this method, the **method identifier** of the method call being represented, and the specific Jvm on which the method is executed.");

recording a stub end log data including the global causal identifier in said instrumented stub after a response is received from said invocation of said second software component, said response including the global causal identifier (Kazi page 7 last paragraph, and pages 4 and 5 as cited above);

wherein said stub start log data and said stub end log data gather runtime information about execution of said second software component within said component-based software system (Kazi page 7 last paragraph: "Additionally, a thread identifier is recorded to uniquely identify the thread executing the method.").

Kazi does not expressly disclose an instrumented stub.

However, in an analogous environment, Blumson teaches instrumenting a stub to

collect runtime data (page 6, Section 6.1: "Our IDL compiler has an

additional command-line flag...to **insert instrumentation.**").

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to use Blumson's stub instrumentation implementation in Kazi's instrumented

jvm. One of ordinary skill would have been motivated to take measurements on certain

operations such as marshalling time that are otherwise difficult, while maintaining a

relatively simple implementation versus modification of a runtime library.

In regard to claims 2-7, 9-11, 13-19, and 21-28, the above rejection of claim 1 is

incorporated. All further limitations have been addressed in the previous Office action

dated June 7, 2004.

As per claim 29, Kazi discloses: *processing an accumulated log data and*

calculating a system behavior characteristic for one or more software components

executing within said component-based software system (page 5 paragraph 2: "The

tree generation step **analyzes the merged trace files to**

create an output file containing the dynamic execution tree

for a given client or server program. This output file is

used by the visualizer to display the call graph."). All further

limitations have been addressed in the above rejections of claims 1 and 9.

In regard to claims 30-32 and 35, the above rejection of claim 29 is incorporated.

All further limitations have been addressed in the previous Office action dated June 7,

2004.

As per claim 36, Kazi discloses a computer system (Figure 3). All further

limitations have been addressed in the above rejection of claim 1.

In regard to claims 37-42, the above rejection of claim 36 is incorporated. All

further limitations have been addressed in the previous Office action dated June 7, 2004.

8.   Claims 8, 12, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over the

combination of Kazi and Blumson as applied to claim 7, 9, and 36, respectively above, and

further in view of prior art of record U.S. Patent 5,522,073 to Courant et al. (hereinafter referred

to as "Courant").

In regard to claims 8 and 12, the above rejection of claim 1 is incorporated. All

further limitations have been addressed in the previous Office action dated June 7, 2004.

In regard to claim 43, the above rejection of claim 36 is incorporated. All further

limitations have been addressed in the previous Office action dated June 7, 2004.

9.   Claim 20 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of

Kazi and Blumson as applied to claim 9 above, and further in view of prior art of record U.S.

Patent 5,146,593 to Brandle et al. (hereinafter referred to as "Brandle").

        In regard to claim 20, the above rejection of claim 1 is incorporated. All further

limitations have been addressed in the previous Office action dated June 7, 2004.

10.   Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over the

combination of Kazi and Blumson as applied to claim 29 above, and further in view of prior art

of record "Unix Power Tools" by Peek et al. (hereinafter referred to as "Peek").

        In regard to claim 33, the above rejection of claim 29 is incorporated. All further

limitations have been addressed in the previous Office action dated June 7, 2004.

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

        "DCE 1.1: Remote Procedure Call" published by The Open Group, teaches the use of

"Universal Unique Identifiers" (UUIDs) which provide a spatially and temporally unique

identifier for tagging objects.

U.S. Patent Application Publication No. 2002/0156767 A1 by Costa et al., provisionally filed on April 12, 2001, teaches the use of UUIDs in log files (page 3 paragraphs [0025] and [0026]).

12.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Derek Rutten whose telephone number is (571) 272-3703. The examiner can normally be reached on M, T, Th, F 6:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jdr

TUAN DAM
SUPERVISORY PATENT EXAMINER